

Docket No.: 0445-0302P
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Toru HAYASE et al.

Application No.: 09/931,028

Confirmation No.: 2692

Filed: August 17, 2001

Art Unit: 3761

For: SHORTS TYPE DISPOSABLE DIAPER

Examiner: C. L. Anderson

DECLARATION PURSUANT TO 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
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Sir:

I, Hayase Toru, declare and say as follows:

1. I am familiar with U.S. Application Serial No. 09/931,028, of which I am a co-inventor.
2. In 1988, I graduated from Gunma University graduate school, upon completion of Engineering graduate course, Organic composition chemistry specialty.
3. In 1988, I joined Kao Corporation, and worked in the Household Products Laboratory as a researcher, and in 1992, I transferred to the Sanitary Laboratory.
4. The following comparative experiment was performed by me or under my direction and supervision:

Background Explanation of the Comparative Testing and Data

In the comparison between the present invention and the reference Watanabe, A designates the present invention and B designates the reference Watanabe.

A corresponds to Example 2 of the present invention. In A, as shown in attached Figure 1, ten string elastic members whose each line thickness is 470dtex were used as the body-surrounding elastic member and disposed at intervals of 12mm at the body-surrounding portion. Five of ten were disposed on the belly side, and remaining five were disposed on the backside.

B corresponds to Fig 6 of the reference Watanabe. In B, as shown in attached Figure 1, six string elastic members whose each line thickness is 940dtex were used as the body-surrounding elastic member. Three of six was disposed on the belly side, and remaining three were disposed on the backside.

In B, the shape of the top sheet, which was used in the commercial product at the time the present invention was filed, is different from that of Fig. 6 of the reference Watanabe, see attached Figures 2 and 3. However, the difference of the shape does not affect an elongation stress of the body-surrounding portion.

Comparative Testing/Data

The body-surrounding portion including the elastic member was cut out in the width direction to make a 80mm wide test sample. According to the method as described at page 11 of the present invention, an elongation stress of the test sample was evaluated.

The attached graph (Graph 1) is a comparison between the present invention and the reference Watanabe as to a 30% elongation stress of the waist-opening portion, which

shows an elongation stress when the test sample, the body-surrounding portion including the elastic member, was stretched (i.e., 33% elongation when the test sample is stretched from 300cm to 400cm). As shown in the Graph 1, a 33% elongation stress σ of A was $165\text{gf}/8\text{cm} = 20.63\text{gf}/\text{cm}$, and that of B was $62.5\text{gf}/8\text{cm} = 7.81\text{gf}/\text{cm}$.

The data demonstrates that in the present invention, a stress of the body-surrounding portion D is significantly greater than that of the reference Watanabe, and the stress to tighten the belly in diapers can be increased.

In addition, the number of string elastic members of the present invention is greater than that of Watanabe, so that the width of gather was able to be broadened. This is significant because by increasing the breadth of the gather, the width in which the body is suppressed broadens, and the wearer's comfort can be substantially increased.

Also, Because a string elastic member was able to be thinned, it was able to be assumed appropriate tightening power without suppressing it too much.

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signature

Toru Hayase

Hayase Toru

10/25/2007

Date

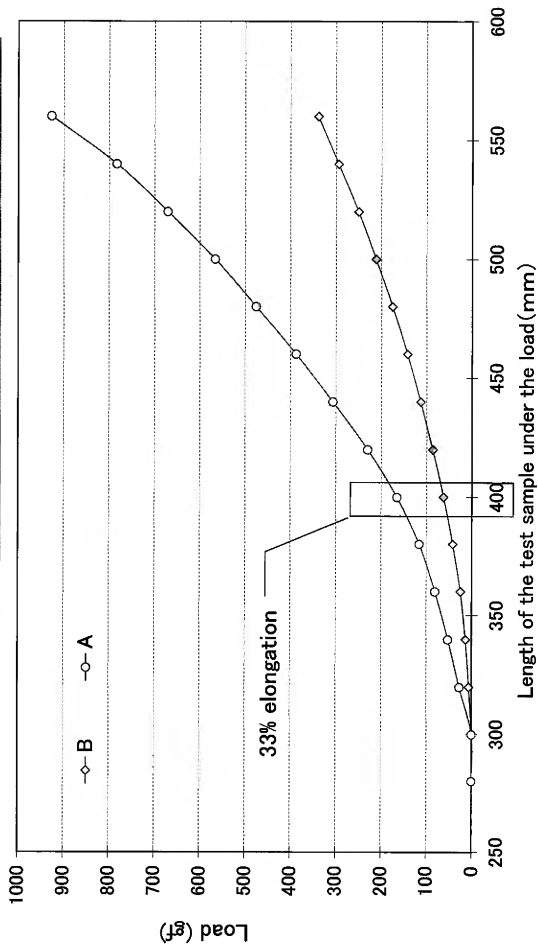
Graph 1. Expansion physical properties of a body-surrounding portion

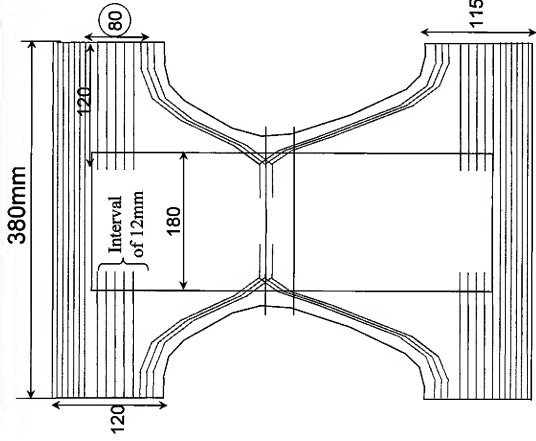
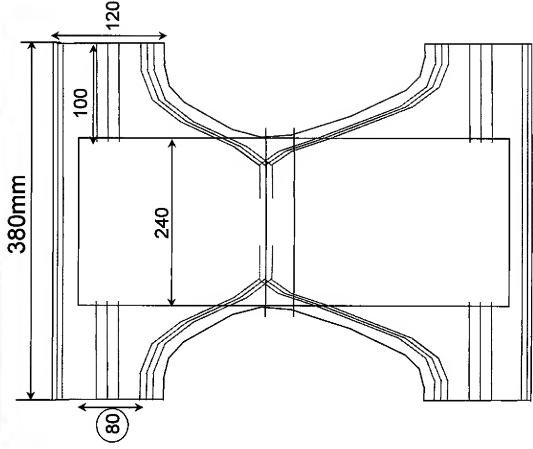
Figure 1. External view of A and B**A****(Example 2 of the present invention)****B****(Equivalent of Fig. 6 in the reference Watanabe)**

Figure 2. Perspective view of A and B

A
(Example 2 of the present invention)

B
(Equivalent of Fig. 6 in the reference Watanabe)

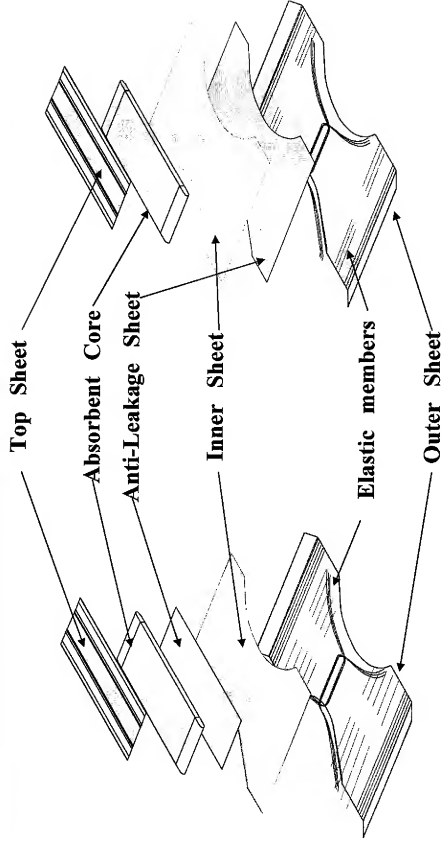


Figure 3. Perspective view of A and Fig.6 of Watanabe

A
(Example 2 of the present invention)

Fig. 6 in the reference Watanabe

